Working smarter: The next level of university efficiencies - July 2011
This report reviewed universities’ performance on efficiency up to 2011. It also looked ahead as Universities Scotland brought together an Efficiencies Taskforce to take a strategic and collaborative approach to efficiency.

Working smarter: Progress report 2012 - May 2012
This document offered a summary of the action plan which had been developed by Universities Scotland’s Efficiencies Taskforce. It represented a step change in universities’ collective action to promote the efficient use of resources.

Working smarter: Progress report 2013 - August 2013
This report reviews progress against the action plan developed in 2012.

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Foreword
Professor Seamus McDaid CBE

In 2011, I established Universities Scotland’s high-level Efficiencies Taskforce in recognition that universities needed to operate as leanly as possible to ensure the best use of the public investment they receive. Last summer my Taskforce set out a number of efficiency goals we wanted the sector to meet in key areas of our business activity such as procurement, ICT, business processes and the university estate. We gave ourselves one-year and three-year timeframes for delivery as we wanted to ensure the work would have momentum.

I have been overwhelmed by the spirit in which universities have embraced this agenda and I am delighted to report a year later that many of the goals for 2013 have been reached or exceeded. Moreover, universities have taken forward strategic and operational initiatives which mean I can already report strong progress against our goals for 2015.

Scotland’s highly successful joint procurement agency, APUC (Advanced Procurement for Universities and Colleges), is now being taken as a model for Procurement UK, the new body being set up to facilitate joint procurement for England’s universities. The autonomy and entrepreneurialism of our sector has supported a wide range of innovations, including the formation of collaborations between universities and between universities and other organisations.

This report is a reflection on our current achievements. It is also a signpost to further work. Of all sectors, universities are at the heart of creating changes that shape the way we live. We are organisations that act both locally and globally and must shape our futures in those contexts.

As I pass on the Convenership of the Taskforce to Professor Sir Ian Diamond I am confident that the sector will not only sustain the momentum generated since the launch of the Scottish Government’s Efficient Government Initiative but will be at the heart of initiatives of all scales delivering significant efficiencies.

Scotland’s universities1 are recognised around the world for their excellence in research and teaching in what is a fiercely competitive global marketplace for higher education. Continued investment from Government is vital to maintaining this position but it is equally important that universities play their part to the fullest and ensure the efficiency of their operations.

Professor Seamus McDaid CBE
Convener of the Universities Scotland Efficiencies Taskforce
Principal of the University of the West of Scotland (until end of July 2013)

[1] Scotland has 19 higher education institutions of which 16 are universities and three are higher education institutions. The term “university” is used throughout this document as shorthand to refer to all 19 higher education institutions.
### Efficiency: Summary of achievements

Innovation and adaptation are at the heart of universities’ culture. Their application to how universities operate, to deliver effectiveness, efficiency and value for money, has never been more important.

The Scottish university sector is a success story in this context. Recent years have seen Scottish universities deliver significant efficiencies, outperforming the £26 million per annum efficiency savings targeted at the last spending review to deliver over £130 million of cumulative efficiencies in the three years to 2010-11.

Such savings are important, allowing for re-investment in the sector to keep Scotland’s research internationally competitive and to ensure the highest quality of student experience. However, they only tell part of the story. Our 19 diverse, autonomous institutions have formed collaborations between each other, and with key partners within the public sector, to deliver not only savings but significant strategic developments, bringing benefits to the public purse, the sector, local communities and the wider economy.

<table>
<thead>
<tr>
<th>Why this area?</th>
<th>Aims for year 1</th>
<th>What was achieved in year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ICT</strong></td>
<td>Collective licensing agreements on virtual learning environments.</td>
<td>IN PROGRESS • Commercial negotiations are on-going and making good progress.</td>
</tr>
<tr>
<td><strong>procurement</strong></td>
<td>We will expand the use of collaborative agreements across the sector to increase coverage of total sector spend. Increase the proportion of institutional spend via collaborative agreements to 25%.</td>
<td>DELIVERED • 30% of universities’ spend is now via collaborative agreements.</td>
</tr>
<tr>
<td><strong>shared services &amp; business processes</strong></td>
<td>Establish the sector’s appetite for shared services in anticipation of new HMRC guidance in 2012.</td>
<td>DELIVERED • 2012 Ernst &amp; Young report confirms strong appetite for shared services with 170+ in the sector.</td>
</tr>
<tr>
<td><strong>estates &amp; carbon reduction</strong></td>
<td>Agree a series of metrics on which to track progress.</td>
<td>DELIVERED • Taskforce members agreed a series of metrics which cover energy consumption, estate management costs, recycling rates, and revenue generation from the estate (sweating of assets).</td>
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</table>

Scottish Universities already lead the UK in joint procurement. As the rest of the UK looks to catch up, we need to make sure we move further ahead.

Leaner business processes across the board can release funding to support learning, teaching and forthcoming research. New VAT regulations mean there may be further opportunities in this area.

Estates and related operations make up around 18% of sector spend and are vital to delivering high quality learning, teaching & research. With decreasing capital funding and a range of environmental imperatives it’s vital we make our assets work as efficiently and effectively as possible.
This report reflects on the success of the sector across four themes: procurement, shared services and business process improvement, estates management, and ICT. In each case the sector has delivered against targets set for 2013 and has already made substantial progress on targets laid down for 2015. This should be both celebrated and taken as a foundation for the next steps. Looking ahead the Taskforce will support:

- benchmarking and the collection of data on the benefits of institutions’ actions;
- a policy environment that is supportive of simplification, streamlining and improvement of internal processes;
- a sector-driven approach to the development of shared services; and
- regulatory reform that reduces costs associated with compliance and facilitates increased efficiency.

### Aims for year 3

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>New collaborative deals in place.</td>
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<tr>
<td>Universities will be central in the wider government reform of ICT</td>
</tr>
<tr>
<td>Continued improvement in the number of institutions achieving the highest rating in the independent assessments of public sector procurement.</td>
</tr>
<tr>
<td>Collaborative agreements will cover 35-40% of sector spend.</td>
</tr>
<tr>
<td>Individual institutions will be in a position to demonstrate efficiencies through improved business processes.</td>
</tr>
<tr>
<td>Collaborations undertaken in a manner which enables them to take advantage of the new VAT regime.</td>
</tr>
<tr>
<td>Demonstrably improve the efficiency of the sector’s estate across a range of measures.</td>
</tr>
<tr>
<td>Significantly reduce the sector’s carbon impact.</td>
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</table>

### What will be achieved in year 3

#### ON TRACK
- NE Scotland partnership between RGU, Aberdeen & regional colleges for primary data centre. Due for completion summer 2013.
- Estimated savings from BPI are up from £12m in 2011-12, projected at £18m in 2013-14 with a further £10m in 2014-15.
- A Scottish HE Improvement Network has been created to share expertise and best practice.
- Energy consumption per student/staff member down 4% in last year.
- Recycling rates stand at 60% - up from 15% in 2007.
- Estate management costs decreasing.
- Carbon emissions per m2 every square metre of Gross internal area down 6.5% from last year.
- In 2013 HEIs submitted 32 bids to SFC for carbon reduction projects.

#### DELIVERED
- Universities an active participant in the FE and HE ICT Oversight Board which followed the McClelland review of public sector ICT.
- The proportion of HE&FE institutions rated as “superior” or “improved” has increased from 22% to 78%.
- Currently at 30 per cent with two years to go.
- APUC is believed to be the first organisation to meet HMRC’s criteria for cost sharing group potentially allowing VAT exemptions.

#### DELIVERING
- Universities an active participant in the FE and HE ICT Oversight Board which followed the McClelland review of public sector ICT.
Getting the best deal: efficiency in procurement

### Summary: Report Card

Progress made towards one-year and three-year targets

<table>
<thead>
<tr>
<th>Targets for 2012</th>
<th>Targets for 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target</strong></td>
<td><strong>Status</strong></td>
</tr>
<tr>
<td>Increase the proportion of institutional spend via collaborative agreements to 25%.</td>
<td><strong>EXCEEDED</strong></td>
</tr>
<tr>
<td>30% of universities’ spend is now via collaborative agreements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>A continued improvement in the number of institutions achieving the highest rating in the independent assessments of public sector procurement.</td>
<td></td>
</tr>
</tbody>
</table>
Case Study - Collaborative Contracting

APUC provides the focus for collaborative procurement across all universities and colleges in Scotland. Savings and efficiency benefits from the use of collaborative agreements across the sector are now regularly being delivered at circa £12-15 million per year (circa 9% of relevant spend), on a ‘versus previous price paid’ basis. Calculated on a ‘versus market’ basis, a methodology commonly used by collaborative contracting organisations, the annual savings are estimated to be over £30 million.

Since 2009, Scotland’s universities and colleges have worked with APUC to put in place an accelerated programme of collaborative contracting, and to work pro-actively with other collaborative bodies. The major partners are the Scottish Procurement and Commercial Directorate of the Scottish Government, the UK Universities Purchasing Consortia, Scotland Excel (local authorities) and NHS National Procurement. This joint working not only delivers the benefits from combined purchasing power, it is also the most efficient way to manage expensive and scarce professional procurement resources.

There are now around 140 framework agreements led, jointly managed or facilitated and promoted to Scottish colleges and universities by APUC, compared to just 24 in 2009.
The sector has exceeded its original three-year target of achieving 30% of validated recurrent sectoral spending going through collaborative agreements by 2011-12 and is now building towards a target of 35%.

Areas of current activity include some that had previously been viewed as particularly challenging, such as internal and external audit, and legal services, which is now the subject of a major UK wide collaborative agreement. APUC has confronted areas of particular complexity by establishing new collaborative activities. For example, it was identified that the sector spent a considerable sum on maintenance of lab equipment but a complex national picture made it very difficult to clearly identify a shared requirement. In response, APUC worked together with the Scottish Universities Life Sciences Alliance (SULSA), winning Scottish Funding Council funding for a one year project to research and map the lab equipment landscape. The resulting database will facilitate both better understanding of collaborative requirements and more efficient use of lab equipment, such as sharing, borrowing and purchase of second hand equipment. APUC aims to web-enable the database to ensure it can be easily kept up to date.

Case Study - Common System/eSolutions as a Shared Service

APUC’s eSolutions team supports the whole of the sector by acting as a shared service centre for roll-out, training and ongoing user support for several electronic procurement systems. Savings/benefits from the use of eSolutions as a shared service are estimated to be well in excess of £1 million per year.

A particularly notable example is Hunter, an enterprise management system developed by APUC which is now used across the whole of the UK’s Universities Purchasing Consortia network (6 regional purchasing consortia), allowing integrated cross-UK collaborative contracting. This allows oversight of collaborative and local procurement activity, supplier management and management information gathering that would only otherwise be available by organisations buying several separate systems. The management of procurement activity is consequently more integrated, more error-free and much more cost effective. APUC is due, in the Summer of the 2013, to roll out the Hunter solution for use by the Scottish Government. This licence to use the system will be provided free of charge to the Scottish Government, with ongoing user support being provided on a shared service basis by APUC.
Case Study - Institutional Level Shared Procurement Services

Since early 2011, APUC has been working with several Scottish universities to move to providing management of their institutional level procurement for them, on a shared service basis. This activity is funded directly by the institutions that wish to utilise this service. It enables smaller institutions that may not be able to justify the expense of the appropriately high level of procurement expertise, or where a combination of skill levels are required across several FTEs, to tap into exactly the level of resource they need without resorting to costly consultancy.

APUC has a very lean back office / business model and is believed to be the first organisation that meets the requirements of the new HMRC Cost Sharing Group arrangements, allowing its members to take advantage of a VAT exemption on shared services. Previously, any HEIs setting up a vehicle to provide a shared service would immediately incur VAT on the service provided, making such arrangements uneconomical except where a saving greater than the rate of VAT was likely to be made. As of April 2013, institutional shared services are provided to 3 universities and 13 colleges.

Case Study - Capability Development in HE/FE

APUC contributes to the development of procurement capability in several ways:

- The university sector has aggressively implemented the Scottish Government cross-sector Procurement Capability Assessment (PCA) programme as a process to assist in identifying areas for improvement. After the assessment each year, each institution is given a tailored improvement plan by APUC, which is reviewed at regular intervals with the APUC Client Account Manager and the person responsible for leading procurement in the institution.
- APUC’s training programme is developed in response to needs identified through the PCA process and other relevant inputs, and published before the start of each academic year, alongside events run by Scotland Excel (the local authority Centre of Procurement Expertise).
- APUC actively encourages the adoption of the Scottish Procurement Competency Framework to aid staff selection, development and review. This framework has now been adopted (with the permission of the Scottish Government) by the UK sector’s Higher Education Procurement Academy (HEPA) as the UK wide standard for professional development in HE procurement.
This work has produced a significant change in procurement capability across Scottish HE. By 2009-10, procurement capability in the HE/FE sector, as measured by the PCA, had already reached impressive levels and the improvement has continued still further:

<table>
<thead>
<tr>
<th>PCA Capability classification</th>
<th>Percentage of relevant spend in each classification by HE and FE institutions (%)</th>
<th>2009</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>level 3 Superior</td>
<td></td>
<td>12%</td>
<td>29%</td>
</tr>
<tr>
<td>level 2 Improved</td>
<td></td>
<td>68%</td>
<td>64%</td>
</tr>
<tr>
<td>level 1 Conformance</td>
<td></td>
<td>20%</td>
<td>7%</td>
</tr>
<tr>
<td>level 0 Non-conformance</td>
<td></td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

This improvement is even more noticeable in the assessments of individual institutions. All HE and FE institutions are now at least conformant with the PCA and the vast majority are in the Superior or Improved categories:

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</thead>
<tbody>
<tr>
<td>level 3 Superior</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>level 2 Improved</td>
<td>20%</td>
<td>72%</td>
</tr>
<tr>
<td>level 1 Conformance</td>
<td>68%</td>
<td>22%</td>
</tr>
<tr>
<td>level 0 Non-conformance</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The proportion of HE & FE institutions rated as “superior” or “improved” has increased from 22% to 78%.

The PCA programme run by APUC has received considerable interest across UK HE and it was highlighted in the recent UUK report on *Efficiency and Modernisation of Higher Education* as a model that should be followed across the UK. The UK organisation Southern Universities Management Services has launched a programme (renamed Procurement Maturity Assessments) that draws heavily on the APUC PCA programme in both approach and content.
## Shared Services and Business Process Improvement

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<td><strong>Target</strong></td>
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<td>Establish the sector’s appetite for shared services in anticipation of new HMRC guidance in 2012.</td>
<td><strong>DELIVERED</strong></td>
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<td>Collaborations undertaken in such a manner as to be compliant with new VAT regime.</td>
<td><strong>DELIVERED</strong></td>
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### Summary: Report Card

**Progress made towards one-year and three-year targets**
Shared Services

Scotland’s universities have a deep-rooted culture of sharing services, bringing not only substantial cost savings but also widespread enhancements to the quality and scale of work carried out in the sector. This can be seen throughout this report; for example, in the impressive results of shared procurement through APUC and the ‘win-win’ of cost savings and performance enhancements achieved through the North East Regional Datacentre. There are further examples right across universities’ operations. A recent study carried out by Ernst & Young found over 170 instances of current successful sharing of services, from shared IT infrastructure to significant collaborations in the delivery of learning and teaching. As Ernst & Young’s report observes, “the current trajectory of collaboration and sharing is strong, demonstrating that it has become an integral part of the sector’s DNA, and will continue to develop with momentum and drive, building on existing initiatives”. The report also details how Scotland’s universities have taken an astute approach to shared services. There are well-known examples from other sectors of shared services initiatives that proved costly and damaging. In contrast, “Over the past 10 years, the higher education sector in Scotland has shaped its own direction to focus on its major strategic challenges. Sharing and collaboration has focused on bringing genuine competitive advantage and overcoming investment challenges that would be otherwise unaffordable, through pooling resources and funding”.

Universities share services not only with each other but also with partners in other sectors, in particular NHS bodies, local authorities and FE colleges, again not only generating savings but creating capacity that individual organisations could not provide.

Shared services in revenue-generating operations: research and knowledge exchange

Sector-wide collaboration to maximise the impact of investments in revenue-generating activities like research and knowledge exchange is a distinctive feature of the Scottish university sector:

Knowledge exchange
University-Technology.com is an initiative of all of Scotland’s universities that brings businesses into contact with new technology opportunities from Scotland’s research base. In addition, all of Scotland’s universities are academic partners in Interface, an agency dedicated to knowledge exchange that, to date, has introduced over 1,520 businesses to academic partners. These initiatives create efficiencies in universities’ marketing and commercialisation operations and attract businesses by offering them an efficient way to identify relevant academic partners, as opposed to making independent approaches to each institution.

To date, Interface has introduced over 1,520 businesses to academic partners.
Research pooling
Research pooling is another distinctive example of collaboration and resource sharing that leverages significant revenue. Ten research pools have been seed funded by the SFC in order to maximise the output of Scotland’s academic research base. Research pools not only stimulate academic collaboration and thereby accelerate innovation, but also allow for sharing of equipment and facilities and streamline links to industry. An independent evaluation of the ScotChem (chemistry research) pool found a more than threefold return on pool funding, in the form of additional competitive research funding won.

Innovation Centres
Innovation Centres are the latest large-scale collaborative initiative in research and knowledge exchange, bringing together consortia of Scottish universities with other public bodies and private sector concerns around investment in major research facilities. By sharing facilities and facilitating collaboration across institutions and across sectors, innovation centres promise a highly efficient approach to creating maximum impact in key research areas. The SFC’s investment of £30 million in the first three Innovation Centres, all in health-related research areas, is expected to be returned many times over. For example, the Sensor and Imaging Systems Innovation Centre is projected to generate between £374 million and £596 million for the Scottish economy.

Case study – Large-scale shared ICT
The university sector has long been a leader in shared provision of ICT infrastructure. The Joint Information Systems Committee (JISC) was established in 1993 and has provided a range of cost-saving services to the UK HE and FE sectors since, including the associated Janet network, which is estimated to have saved millions of pounds for universities and colleges while providing a service that is targeted at the particular needs of the research and teaching community. Other large-scale ICT facilities also benefit from a shared approach, including the University of Edinburgh’s hosting of high performance computing (HECToR and BlueGene/Q) facilities for the UK sector, facilitating complex simulations across a range of scientific disciplines. With costs in the hundreds of millions, such facilities are beyond the reach of individual institutions, and are made possible by the collaborative approach taken across HE institutions, government and funding bodies. The services offered by the University of Edinburgh include consultancy in the design, deployment, management and utilisation of high performance computing (HPC) and large-scale data analytics, combined with HPC Cloud and data service provision, making use of the largest HPC infrastructure in the UK sector.

The Sensor and Imaging Systems Innovation Centre is projected to generate between £374-£596 million for the Scottish economy from a share in an initial £30 million SFC investment.
Case study – Shared ICT for libraries

University libraries also gain substantial advantages from collaboration over ICT solutions. The Scottish Higher Education Digital Library (SHEDL) is a purchasing consortium for the electronic journal and eBook resources for all Scottish HEIs and the National Library of Scotland. Alongside significant cost reductions through collective procurement, the resulting sharing of expertise also enhances support for digital resources in research and teaching while reducing the institutional costs of this support. SHEDL also ensures equitable access to digital resources, regardless of the size or type of institution. In addition to SHEDL, the Scottish Digital Library Consortium (SDLC) – involving eight Scottish universities, the Scottish Government, the National Library of Scotland, the Signet Library and the Royal Observatory – provides three forms of subscription service to its members: Library Management Systems, Resource Discovery services and Institutional Repositories. SDLC members save costs through the hosting of a number of services at the University of Edinburgh, and through collective bargaining, while the sharing of expertise brings qualitative benefits and facilitates the use of Open Source solutions.
Aberdeen Sports Village (ASV) is the premier sports facility in the North East of Scotland. Developed through a partnership between the University of Aberdeen, Aberdeen City Council and sportscotland, its aim is to provide world class sport and exercise opportunities for everyone in the community and to be recognised as a centre of excellence for sport. It opened in August 2009 and a second phase, including the Aquatics Centre, is due for completion in 2014. The cost of the ASV was approximately £28 million, and the budget for the second phase of work is £21 million.

ASV was created to meet the twin needs of upgrading the University’s sporting facilities and creating a regional sports facility as outlined in the Scottish Government’s National and Regional Sports Facilities Strategy. All partners now have access to a facility that they could not have afforded as individual organisations. The centre attracts over 12,500 visitors each week, more than double the original target of 5,500. The ASV was an Olympic training centre for London 2012 and has established a ground-breaking Athletics Academy and a disability hub.

The success of the facility has already delivered annual savings to the partners on their projected annual costs, resulting in facilities of a markedly higher quality, at a cost to each partner of less than or equal to the facilities they replace.
Business Process Improvement

The HE sector in Scotland has taken up the latest advances in Business Process Improvement (BPI) enthusiastically and with impressive results. Institutions are seeing substantial savings, as well as improvements in student experience and the research environment, as a result of applying methodologies such as LEAN and Six Sigma, which facilitate a systematic approach to processes and procedures to maximise effectiveness and efficiency. The Scottish Higher Education Improvement Network has been created to help share expertise and best practice in these approaches. Sectoral savings made through BPI are estimated at £12 million in 2011-12, £16.9 million for 2012-13 and a projected £18 million in 2013-14 and a further £10 million in 2014-15.

Business Process:

A specific ordering of work activities across time and place, with a beginning, an end and with clearly identified inputs and outputs (a structure for action) that will enable delivery of a defined business outcome.

Business Process Improvement:

A business process improvement is a systematic approach to help organisations to achieve significant changes in the way they do business that deliver greater benefits in one or more of effectiveness, efficiency and value for money.

Case Study – Applying Lean principles

The University of St Andrews has made significant BPI efficiencies through the application of the Lean principles:

- Lean self-certification of student absence is estimated to have saved the university over £130,000 each year for each of the past four years. The development of new software brought about consistency of process and saved large amounts of administrative staff time. The new system also allows real-time monitoring of student absence data, helping the university to identify students at risk of not completing their course at an early stage.
- Lean improvements to the staff recruitment process have saved the university £150,000 each year for the past four years.
- Improved student debt management and streamlining of the matriculation process has saved £100,000 each year for the past four years. Relevant improvements have brought efficient accounting processes, easier payment for international students and improved access for students to their financial information, which helps to prevent problematic debts.
- A Lean review of casual contracts has created efficiencies of £24,000 each year for the past four years by streamlining the payment process.
Case Study – Print consolidation

In September 2011 the University of Aberdeen introduced a consolidated printing and photocopying service, with the aim of phasing out existing inefficient desktop printing facilities. This has now been fully implemented. The managed service is based on a fleet of 320 multi-function devices, which are much more energy efficient and cost effective than the printers they replaced. The majority of savings are made through reduced capital costs of desktop printers and separate photocopying contract, as well as net savings of £330,000 per annum savings in consumables (paper and toner), plus reduced support costs. The annual savings of £330,000 were partially offset by the start-up cost of £250,000 in the first year. Additional savings are being made as a result of the reduction in energy consumption.

Case Study – Server virtualisation

Server virtualisation is the use of software that allows each server computer to run multiple ‘virtual machines’ and so to perform functions that are otherwise distributed across multiple computers. This was introduced into the University of Aberdeen data centres in order to optimise utilisation of physical hardware, reduce per server energy consumption and reduce data centre space requirements. Over 40% of the server inventory was virtualised in the course of 2011-12, creating savings of £270,000 in that year alone. This will rise to over 60% by the end of 2012-13 and the aim is to reach 80% virtualisation by the end of 2013-14, generating savings of £690,000 per annum. All of this was implemented as part of the recurrent hardware replacement programme and therefore at no additional cost.

Case Study - SLEEK (Strathclyde’s Lean Six Sigma Efficiencies in Education Kit)

The University of Strathclyde initiated its SLEEK (Strathclyde’s Lean Six Sigma Efficiencies in Education Kit) programme in April 2011 to establish a methodological approach to Business Process Improvement across the institution. More than 60 staff from across the University were trained through this programme and these staff initiated 30 process improvement projects, across both professional services and faculties, with efficiency savings reported at nearly £250,000. Following on from this pilot, the University has established a Business Improvement Team who will work in partnership with Unipart Expert Practices to deliver large process changes and to create and sustain a culture of continuous business improvement throughout the University.
## Making the most of the higher education estate

### Targets for 2012

<table>
<thead>
<tr>
<th>Target</th>
<th>Status</th>
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<tbody>
<tr>
<td>Agree a series of metrics on which to track progress.</td>
<td><strong>DELIVERED</strong> Taskforce members agreed a series of metrics which cover energy consumption, estate management costs, recycling rates, revenue generation from the estate (sweating assets).</td>
</tr>
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### Targets for 2015

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Demonstrable improvement in the efficiency of the estate.</td>
<td><strong>ON TRACK</strong> Energy consumption per student/staff member down 4% in last year.</td>
</tr>
<tr>
<td>Recycling rates stand at 60% - up from 15% in 2007.</td>
<td></td>
</tr>
<tr>
<td>Estate management costs decreasing.</td>
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</tr>
<tr>
<td>Revenue generation from estate on the increase.</td>
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**Reduction in the sector’s carbon impact.**

### Summary: Report Card

**Progress made towards one-year and three-year targets**

- **In 2013 HEIs submitted 32 bids to SFC for carbon reduction projects.**

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18
The Scottish HE sector has been working hard to improve efficiency in the use of its estate, in terms of both cost reduction and carbon footprint. This effort is now bringing returns in many aspects of estate management:

**Cost reduction**

- Security and porterage costs, relative to non-residential Gross Internal Area (GIA, measured in m$^2$), fell by 7% in real terms over the past five years.
- Central post room and internal distribution costs (relative to non-residential GIA) fell by nearly 30% in real terms over the past five years.
- Cleaning costs (relative to GIA) have fallen by 3.2% in real terms over the past five years.
- Internal estate management costs (relative to residential GIA) have dropped by 2.1% in real terms over the past five years.

**Revenue generation**

Universities have been entrepreneurial in maximising the value of their estates, resulting in impressive gains:

- Non-residential income (relative to non-residential GIA) has risen by 3.4% in real terms over the past five years.
- Within this, research income (relative to non-residential GIA) has risen by 11.4% in real terms over the past five years.
- Revenue from CPD and facilities has risen by 5.75% in real terms over five years.
Environmental impact

- The proportion of waste recycled by higher education institutions in Scotland has risen steadily to quadruple over the past five years, going from less than 15% in 2006-7 to over 60% in 2011-12.

Reducing energy consumption remains a significant challenge as demand continues to rise with new technologies – and partly as a function of intensive research activity – but notable progress has been made in the last year. Many of the examples in this report show how universities are cutting energy consumption through a variety of initiatives.

- Energy consumption per student/staff member has fallen by over 4% in the past year.
- Notional carbon emissions for every square metre of GIA have dropped by 6.5% in the past year.

In addition, universities have worked hard to ensure that teaching space is used as efficiently as possible, for example by enhancing room management and timetabling procedures. The utilisation rate for teaching space shows an upward trend over the past five years; the median value has risen by 4% in that time.

These figures reflect the success of many initiatives undertaken by universities, both jointly and individually, to maximise the use of their estates. Just a few illustrative examples are given below.
Case study – University of Strathclyde Single Campus

In 2009 the University of Strathclyde took a strategic decision to combine its operations, at that time spread over two campuses, the Jordanhill Campus in the West End of Glasgow, and the John Anderson Campus in the centre, to a single city-centre campus. At the same time a major investment of £38 million was made to refurbish buildings to accommodate the integration of the Faculty of Humanities and Social Sciences in city centre operations. 350 staff and 2,000 students relocated to the city centre. An overall space reduction of 14% was achieved for the same activities. The project brought about a 5,000 tonne carbon reduction whilst upgrading facilities to create attractive and contemporary accommodation with self-policing, secure and open access.

Taking the opportunity to introduce cost-effective digital solutions and flexible spaces, this move has brought in new ways of working, including open plan ‘village cluster’ working, and created quiet rooms and spaces for collaboration, meetings and tutorials. The student experience has been improved, including increased access to central services, and campus identity has been strengthened and improved.

With the closure of the Jordanhill Campus in July 2012, land and building assets were unlocked for disposal, freeing up resources for the university to invest in the student experience and world-class research.

Case study – University of Edinburgh Main Library Redevelopment

Efficiency in estates can involve new construction, but it also means deriving maximum value from existing buildings. An example of the latter is the University of Edinburgh’s renovation of its main library, a major project to enhance services and to modernise the library for the 21st century user. This has allowed the existing building to accommodate a significant increase in service provision: the library has seen increased footfall from circa 1.2 million in 2006 to circa 2 million in 2013 with study spaces increasing in the same period from 1,723 to 2,203 and increased opening hours up to 22 hours a day. The refurbished building also allows co-location of front-facing student support staff by incorporating the relocation of Student Counselling, Careers and Disability Services within the building, with associated enhancements to both service provision and efficiency of operations. Incorporation of these Student Services into the central location has increased the uptake of these services by 40%. The use of compact shelving where possible has improved the efficiency of space use, meeting the increased study space requirements while storing appropriate collections and materials within the library building. A number of significant energy-saving improvements were made to the building during the renovation. All this was achieved within a live building over a six year contract period, whilst respecting and enhancing the original, A-listed building design.
Case study – UWS & SRUC: Ayr Campus Development

Thanks to a collaborative campus development, staff and students of the University of the West of Scotland (UWS) and Scotland’s Rural College (SRUC) in Ayr enjoy superior facilities housed in a campus that is rated ‘Excellent’ on the BREEAM assessment scheme for sustainable building. Located in a woodland setting, the campus utilises the external as well as internal area to maximise the space and create an excellent experience for users. The resource efficiency figures that have been realised in the first year of occupancy demonstrate the success of this joint venture. The benefits delivered by the project include the following:

• Relocation of campus to an easily accessible location, increasing access to amenities and public transport.
• Campus design with impressive space utilisation ratios and capacity for increased student numbers, along with the cost efficiencies of a shared facility.
• The shared campus also allowed surplus property assets to be identified for disposal and future income generation.

The space efficiency and resource consumption levels achieved are impressive:

<table>
<thead>
<tr>
<th></th>
<th>EMS Average*</th>
<th>Ayr Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space per person</td>
<td>8.8m²</td>
<td>4.9m²</td>
</tr>
<tr>
<td>Energy use per person</td>
<td>2,446kwh</td>
<td>1,706 kwh</td>
</tr>
<tr>
<td>Water use per person</td>
<td>6m³</td>
<td>1.26m³</td>
</tr>
<tr>
<td>Waste per person</td>
<td>0.11 tonnes</td>
<td>0.01 tonnes</td>
</tr>
</tbody>
</table>


The innovative UWS/SRUC campus in Ayr, developed in consultation with Historic Scotland, Scottish Natural Heritage and the Scottish Wildlife Trust.
In 2007, a district heating scheme was commissioned at the new Queen Margaret University Edinburgh campus at Musselburgh in East Lothian. Initially, from October 2007, heating for the academic buildings and student residences was provided from mains gas. In August 2008, heat supplies from biomass fuel began. The new campus became fully operational in September 2008. The 1,500kW Kohlbach biomass boiler is among the largest non–industrial applications of this technology in the UK. The district heating system is understood to be the largest biomass fed system in UK HE.

On average the biomass boiler has met 95% of the heating demand in each year, with supplementary gas boiler capacity providing the remaining 5%. The unit cost of heat from biomass is substantially less than that from mains gas: compared with 100% mains gas usage, the annual cost savings are circa £145,000 per annum. These operating cost savings offset additional capital cost. On this basis, the simple payback period on the £700,000 capital cost premium lies in the range of 4.8 years to 6.5 years (or 9.6 years with no capital grant).

The Biomass heat generation provides an 85% improvement in CO2 emissions compared with equivalent gas fired heating (18.7 kg CO2/m²) and a 92% improvement on the previous estate (34 kg CO2/m²).

The Biomass system is embedded in a new campus that is regarded as one of Scotland’s most sustainable. The campus is landscaped to encourage biodiversity and designed to maximise energy efficiency. In terms of heating consumption, the new campus is achieving 124.6 kWh/m² which is better than best practice for the sector and an improvement of 41% on the 209.8kW/h/m² realised for the previous campus development.
### Effectiveness and Efficiency in ICT

#### Targets for 2012

<table>
<thead>
<tr>
<th>Target</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective licencing agreements on virtual learning environments.</td>
<td>IN PROGRESS</td>
</tr>
<tr>
<td>Commercial negotiations are on-going and making good progress.</td>
<td></td>
</tr>
</tbody>
</table>

#### Targets for 2015

<table>
<thead>
<tr>
<th>Target</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>New collaborative deals in place.</td>
<td>ON TRACK</td>
</tr>
<tr>
<td>NE Scotland partnership between RGU, Aberdeen &amp; regional colleges for primary data centre. Due for completion summer 2013.</td>
<td></td>
</tr>
<tr>
<td>Rowan partnership for common library automation covers 20 sites of UHI and SRUC.</td>
<td></td>
</tr>
<tr>
<td>Universities will be central in the Government’s wider reform of ICT.</td>
<td>DELIVERED</td>
</tr>
<tr>
<td>Universities an active participant in the Further and Higher Education ICT Oversight Board which followed the McClelland review of public sector ICT.</td>
<td></td>
</tr>
<tr>
<td>A set of objectives and actions for HE &amp; FE have been agreed &amp; published in March 2013 with clear read-across from DPS strategy.</td>
<td></td>
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</tbody>
</table>

### Summary: Report Card

Progress made towards one-year and three-year targets.
Further and Higher Education ICT Strategy
The Scottish national Further and Higher Education ICT Strategy, developed by the Further & Higher Education ICT Oversight Board, was published in March 2013. The strategy aims to:

- help the Scottish college and university sectors to identify opportunities to share ICT services in the most efficient and cost effective manner.
- encourage institutional strategies which avoid lock-in to a particular technology or system, so that short term objectives can fit with longer term objectives as opportunities arise.
- encourage engagement with the long term vision so that, in all ICT developments, the scope for collaboration/convergence is a standard consideration.
- establish a sound evidence base to identify priorities and inform investments.
- identify the optimal level for collaboration, whether between institutions, across sectors, or nationally.

A particular strategic objective is to “develop the sector’s capability to develop and adopt shared services” and plans are being developed to establish a small but focussed support service intended to catalyse and promote further shared ICT initiatives in the sector. Professionals from all of Scotland’s Higher Education Institutions are committed to the delivery of the strategy and have been engaged in its development and the ongoing implementation effort through the Universities Scotland Efficiencies Taskforce, the ICT Oversight Board and Higher Education Information Directors Scotland (HEIDS).

Case Study – North East Shared Services (NESS) Regional HE & FE Shared Datacentre

A key theme of the McClelland Review of ICT Infrastructure in Scotland’s Public Sector was the need to rationalise the large number of data centres, with each institution typically having its own provision. In the North East of Scotland, a number of institutions – Robert Gordon University, the University of Aberdeen, Aberdeen College and Banff —& Buchan College – have built a shared primary data centre, with substantial projected savings. The new data centre is due to be completed over the summer of 2013. The co-location was projected to bring an estimated £300,000 per annum saving for the three institutions, through the initial lower capital costs of leveraging capacity in one institution and through reducing power consumption and annual maintenance – and in fact current measurements indicate that the saving may well be much higher. Substantial carbon footprint reductions are also achieved (1,222 tonnes of carbon per annum), partly as a result of using the University of Aberdeen’s combined heat and power facility. At the same time, the shared data centre has brought...
improvements in system resilience, documentation and the monitoring and reporting of performance. As well as bringing immediate savings, the co-location of IT assets in one facility also provides a longer term opportunity to share IT assets and/or services delivered from these assets, with the prospect of greater efficiencies.

Case Study – Shared Library System (Rowan partnership)

The University of the Highlands and Islands, the University of the West of Scotland and Scotland’s Rural College (SRUC) have moved to share a common library automation system across all three institutions through their Rowan partnership.

The system covers more than 20 sites across Scotland with over 25,000 students. The initiative has reduced recurrent costs, for example licensing and maintenance costs, and has brought significant non-cashable benefits from the creation of a joint Systems Librarian post, a shared bibliographic database to facilitate greater access to resources, development of a common cataloguing policy and an increased staff knowledge base. Sharing of technical expertise has enabled the use of Open Source solutions.

More broadly, the HE library community in Scotland is exploring options for the development of shared systems across the entire sector, through the Scottish Library and Information Council, the Scottish Confederation of University Research Libraries and the Higher Education Information Directors Scotland.

Case Study – CCTV

At the University of the West of Scotland, CCTV was transferred from a separate system onto the ICT data network. While upgrading the CCTV system to modern technologies, including HD cameras and use of Power over Ethernet to power the equipment over the data network, an improvement in quality and reduction in running costs was achieved by effective collaboration across Estates and ICT services.
Conclusion

Scotland’s universities are firmly committed to efficiency and are delivering both substantial cost savings and operational improvements through a wide range of initiatives. The sector has set itself stretching targets for the short term and longer term and is well on the way to meeting every one of these, in many cases well ahead of schedule. With a recent record that includes establishing the UK’s first Cost Sharing Group, over 170 instances of shared services, and overall efficiencies that well outstrip the sector’s targets, the university sector is truly a leader in delivering efficient use of resources.

Universities will always strive to deliver the best value for public funds. Efficiencies are also an essential part of universities’ ability to sustain the world-class research, education and knowledge exchange that are central to Scotland’s economic success and social wellbeing, all while maintaining and improving large estates and facilities. There are currently unprecedented challenges to maintaining the leading position and worldwide reputation of our universities, as emerging economies join established players in investing heavily in higher education. Lean operations and shared services are essential to meeting these challenges, alongside the crucial need for appropriate and sustained levels of investment.

Universities are determined to build on the impressive progress on efficiencies that has been delivered in recent years. The successes of the recent past point the way to intensifying such work and identifying new opportunities for efficiency right across the operations of our diverse sector. The sector will continue to apply an intelligent, strategic approach to efficiency, with the driving force of the Universities Scotland Efficiencies Taskforce behind it. This next level of work on efficiencies is already in train: the Taskforce is working with both institutions and communities of practice to guarantee further progress towards the longer term targets that the sector has set for itself, while a fresh assessment of priorities and challenges is underway. The sector’s co-ordinated and pro-active approach ensures that every opportunity is taken to maximise the impact of universities’ resources.